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10/593,630	09/21/2006	Nobuhiro Ide	80083(302721)	2578

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EXAMINER

DIAZ, JOSE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,630	Applicant(s) IDE ET AL.	
	Examiner JOSE M. DIAZ	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-11 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6,8 and 9 is/are allowed.
- 6) ☒ Claim(s) 2-5,7,10,11 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. <u>12/07/2010</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/08/2010 has been entered.

Cancellation of claims 15-17 has been entered.

Claims 2-11 and 13 are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sugiura et al (20040012980)**, hereinafter **Sugiura**, in view of **Kido et al (20030189401)**, hereinafter **Kido**.

Regarding **claim 2**, Sugiura clearly shows and discloses an organic light emitting device having an emission layer (4) between an anode (5) and a cathode (12), wherein

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the organic light emitting device further comprises: an optically-transparent electrode (5); and a light scattering means, at least either inside or outside the device, for scattering light emitted from the emission layer (4), wherein a first electrode (5) of the anode or the cathode is an optically-transparent electrode and mounted on the optically-transparent substrate (glass substrate 1, ¶ [114]); , wherein the emission layer (4) is mounted on the first electrode (5), and wherein the light scattering means comprises a second electrode (12) of the anode or the cathode by a light-scattering and light-reflective electrode (12) and mounted on the emission layer (4) (figs. 1-3, ¶s [0101], [0114]).

However, Sugiura fails to exemplify a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer.

In the same field of endeavor, Kido clearly shows and discloses a plurality of emission layers (3-1, 3-2, 3-3) being separated from each other by an equipotential surface forming layer or a charge generating layer (4-1, 4-2) (fig. 8, ¶ [0175]), in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer as taught by Kido in the device of Sugiura, in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Regarding **claim 3**, Sugiura clearly shows and discloses an organic light emitting device having an emission layer (4) between an anode and a cathode, wherein the organic light emitting device further comprises: an optically-transparent electrode (5); and a light scattering means, at least either inside or outside the device, for scattering light emitted from the emission layer, wherein a first electrode of the anode or the cathode is an optically-transparent electrode (5) and mounted on an optically-transparent substrate (glass substrate 1), wherein the emission layer (4 is mounted) on the first electrode (5); wherein a second electrode of the anode or the cathode is an optically-transparent electrode (13) and mounted on the emission layer (4) and wherein the light-scattering comprises a light-scattering and light-reflective element (14) on the second electrode (13) (fig. 5, ¶s [0101], [0114], [0125]).

However, Sugiura fails to exemplify a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer.

In the same field of endeavor, Kido clearly shows and discloses a plurality of emission layers (3-1, 3-2, 3-3) being separated from each other by an equipotential surface forming layer or a charge generating layer (4-1, 4-2) (fig. 8, ¶ [0175]), in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer as taught by Kido in the device of Sugiura, in order to effectively and

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stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Regarding **claim 4**, Sugiura clearly shows and discloses an organic light emitting device having an emission layer (54, ¶ [157]) between an anode and a cathode, wherein the organic light emitting device further comprises: an optically-transparent electrode (57); and a light scattering means, at least either inside or outside the device, for scattering light emitted from the emission layer (54), wherein a first electrode of the anode or the cathode is a light- scattering and optically-transparent electrode (57) and mounted on the optically-transparent substrate (glass substrate 51 ¶ [158]), wherein the emission layer (54) is mounted on the first electrode (57), and wherein said light scattering means comprises a second electrode (reflective electrode 52 with an irregular surface) of the anode or the cathode, which is a light-reflective electrode mounted on the emission layer (54) (fig. 14).

However, Sugiura fails to exemplify a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer.

In the same field of endeavor, Kido clearly shows and discloses a plurality of emission layers (3-1, 3-2, 3-3) being separated from each other by an equipotential surface forming layer or a charge generating layer (4-1, 4-2) (fig. 8, ¶ [0175]), in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a plurality of emission layers being

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separated from each other by an equipotential surface forming layer or a charge generating layer as taught by Kido in the device of Sugiura, in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Regarding **claim 5**, Sugiura clearly shows and discloses an organic light emitting device having an emission layer (4) between an anode and a cathode, wherein the organic light emitting device further comprises: an optically-transparent electrode (5); and a light scattering means, at least either inside or outside the device, for scattering light emitted from the emission layer, wherein the light scattering means comprises a light-scattering and optically-transparent element (16) on the optically-transparent substrate (glass substrate 1 ¶ [114]), wherein a first electrode of the anode or the cathode is an optically-transparent electrode (5) and mounted on the element (16); wherein the emission layer (4) is mounted on the first electrode, and wherein a second electrode of the anode or the cathode is a light-reflective electrode (2, ¶ [101]) and mounted on the emission layer (4) (fig. 6, ¶s [0101], [0114], [0131]).

However, Sugiura fails to exemplify a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer.

In the same field of endeavor, Kido clearly shows and discloses a plurality of emission layers (3-1, 3-2, 3-3) being separated from each other by an equipotential surface forming layer or a charge generating layer (4-1, 4-2) (fig. 8, ¶ [0175]), in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer as taught by Kido in the device of Sugiura, in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Claims 7 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Senbonmatsu (20030102801)**, **Senbonmatsu hereinafter**, in view of **Kido et al (20030189401)**, **hereinafter Kido**.

Regarding **claim 7**, Senbonmatsu clearly shows and discloses an organic light emitting device having an emission layer (110) between an anode (106) and a cathode (115), wherein both the anode and the cathode are formed by optically-transparent electrodes a first electrode of the anode or the cathode being provided on an optically-transparent substrate (102), the emission layer being provided on the first electrode, a second electrode of the anode or the cathode being provided on the emission layer, an optical spacer (102) being provided on the second electrode, a light reflective element (114) being provided on the optical spacer a distance between the light reflective element and the emission layer being in the range of about 1 μ m to 1 mm by means of the optical spacer so as to be set to a distance where an angle dependency of light emission brightness and light emission color can be reduced (fig. 18, Table 5). It is to be noted that the claimed structure from FIG. 10 of the instant application, wherein the

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substrate "10" also serve as the optical spacer "11", is analogous to Senbonmatsu's embodiment of figure 18. Table 5 Example 14 discloses that the substrate/optical-spacer (102) can have a thickness of $0.1\text{mm} = 100\mu\text{m}$ and the transparent electrode (106) can have a thickness of $100\text{nm} = 0.1\mu\text{m}$; therefore the distance between the light reflective element (114) and the emission layer (110) is $100.1\mu\text{m}$.

However, Senbonmatsu fails to exemplify a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer.

In the same field of endeavor, Kido clearly shows and discloses a plurality of emission layers (3-1, 3-2, 3-3) being separated from each other by an equipotential surface forming layer or a charge generating layer (4-1, 4-2) (fig. 8, ¶ [0175]), in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer as taught by Kido in the device of Senbonmatsu, in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

It is to be noted that the combination of Senbonmatsu and Kido meets all the structure limitations of the organic light emitting device. The limitation " so as to be set to a distance where an angle dependency of light emission brightness and light

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emission color can be reduced” is a functional statement. Therefore the in the combination of Senbonmatsu and Kido distance between the light reflective element and the emission layers can be adapt to perform the claimed function, i.e. to reduce an angle dependency of light emission brightness and light emission color.

The following is a quotation of the MPEP 2114

APPARATUS CLAIMS MUST BE STRUCTURALLY DISTINGUISHABLE FROM THE PRIOR ART

>While features of an apparatus may be recited either structurally or functionally, claims< directed to >an< apparatus must be distinguished from the prior art in terms of structure rather than function. >In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429,1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board’s finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971);< In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). “[A]pparatus claims cover what a device is, not what a device does.” Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

Regarding **claim 10**, in the combination of Senbonmatsu and Kido, Kido clearly shows and discloses that the plurality of emission layers comprises emission layers (3-1, 3-2, 3-3) of at least two different emission colors (fig. 8, ¶ [0207]).

Same rationale to combine from the rejection of claim 7 applies.

Regarding **claim 11**, in the combination of Senbonmatsu and Kido, Kido clearly shows and discloses that the emission color of the organic light emitting device is white (fig. 8, ¶ [0207], claim 29).

Same rationale to combine from the rejection of claim 7 applies.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Senbonmatsu (20030102801)**, **Senbonmatsu hereinafter**, in view of **Kido et al (20030189401)**, **hereinafter Kido**, and further in view of **Tyan et al (20040061136)**, **hereinafter Tyan**.

Regarding **claim 13**, in the combination of Senbonmatsu and Kido discloses the claimed invention.

However, the combination of Senbonmatsu and Kido fails to exemplify that the light reflective element is a multilayered film of a dielectric.

In the same field of endeavor, Tyan clearly shows and discloses a light reflecting layer (composed by 26, 24, and 12) that is a multilayered film (fig. 11, ¶ [50]), in order to enhanced light extraction from device.

However, in the combination of Senbonmatsu, Kido and Tyan, Tyan is silent about the multilayered film been formed of a dielectric material.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the light reflecting multilayer film of a dielectric material, since it has been held to be within the general skill of a worker in the art to select a

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known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Allowable Subject Matter

Claims 6 and 8-9 are allowed.

The reasons for allowance were stated on the previous Office action.

Response to Arguments

Applicant's arguments regarding claims 2-5, 7 and 13 have been fully considered but they are not persuasive. Examiner most respectfully disagrees with Applicants' arguments.

Regarding the argument with respect to claims 2-5; Applicants' basically argues that in the combination of Sugiura and Kido, Sugiura fails to provide an optically-transparent electrode as a first electrode mounted on an optically-transparent and a light-scattering and light-reflective electrode as a second electrode. It is to note that all the device components, i.e. transparent electrode(s), light-scattering/reflective element, etc., are on the substrate (1) and mounted on each other; the word "on" does not mean that the electrode is in direct contact with the substrate, there can be an element therebetween, or the device components can be formed on a different order of precedence, since the claim do not limit the structure to be in a very specific order. One of the given definitions to the word mounted by the Merriam-Webster Dictionary is: to put or have in position; therefore, to say that a layer A is mounted on layer B could be

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interpreted as layer A been position above or below layer B. Thus, Sugiura does teach all structure limitation argued by Applicants.

Regarding the argument with respects to claim 7; the Examiner is aware of the differences between the claimed invention and Senbonmatsu's disclosure. However, the invention as claimed does not precludes Senbonmatsu's disclosure to be applied, as stated on the rejection above. Examiner points out that, on Senbonmatsu's disclosure, it is layer (114) the one considered as the light reflective element and not layer (104) and as stated above the limitation for the distance between the light reflective element and the emission layer is met through the substrate/optical-spacer (102) and transparent electrode (106).

With respects to the arguments regarding claim 13; paragraph [132] just provides a list of optical effects the can be use to enhance an OLED light emitting properties. Is not clear how ¶ [132] would preclude layer 26, 24, and 12 to be considered as to compose a multilayered light reflecting layer.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 20040041516 A1, ¶ [0004] provides evidence of a dielectric materials used as a light reflecting layer "an insulating (dielectric) layer, i.e., a light reflecting layer".

This statement is with regard to the obvious rationale of the rejection of **claim 13**.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSE M. DIAZ whose telephone number is (571)272-9822. The examiner can normally be reached on 7:00 - 5:00 EST Monday-Thursday; Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/José M. Díaz/
Examiner, Art Unit 2879

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